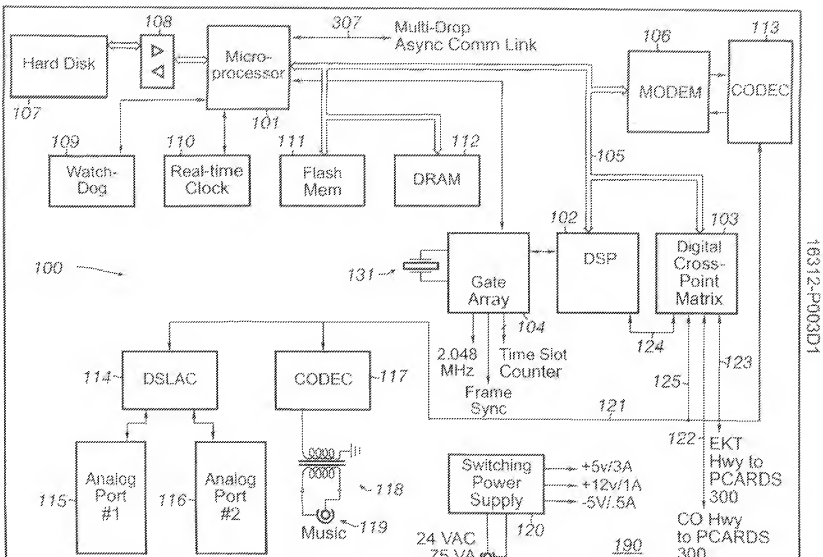

Hard Disk
107
108
Micro-processor
101
307
Multi-Drop
Async Comm Link
106
MODEM
113
CODEC
105
109
Watch-Dog
110
Real-time Clock
111
Flash Mem
112
DRAM
100
131
Gate Array
102
DSP
103
Digital Cross-Point Matrix
104
2.048 MHz
Time Slot Counter
Frame Sync
121
124
125
123
114
DSLAC
CODEC
117
115
Analog Port #1
116
Analog Port #2
0000
0000
118
Music
119
Switching Power Supply
+5v/3A
+12v/1A
-5V/.5A
120
24 VAC
75 VA
190
122
EKT Hwy to PCARDS 300
CO Hwy to PCARDS 300

Fig. 1

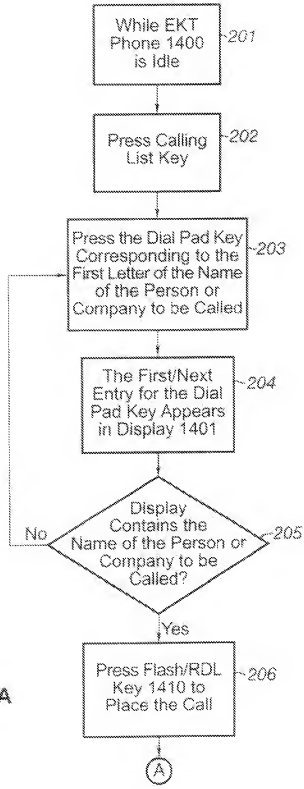
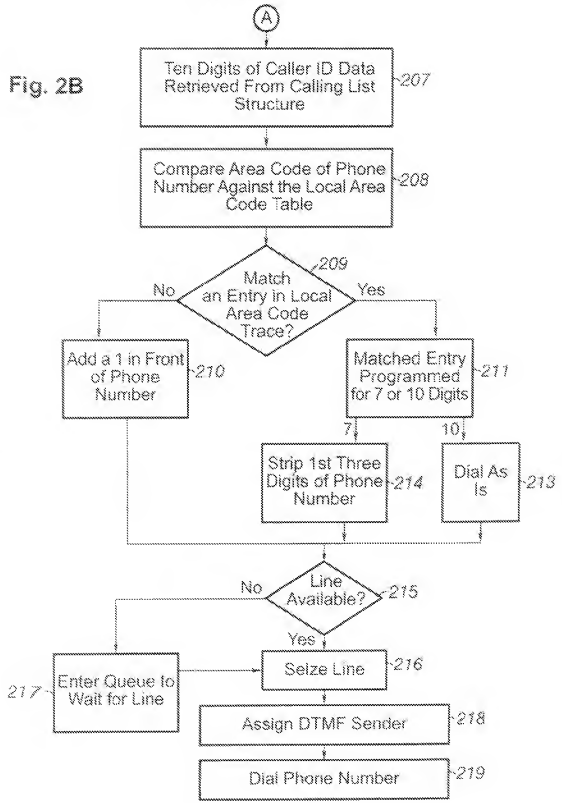

While EKT Phone 1400 is Idle
201
Press Calling List Key
202
Press the Dial Pad Key Corresponding to the First Letter of the Name of the Person or Company to be Called
203
The First/Next Entry for the Dial Pad Key Appears in Display 1401
204
Display Contains the Name of the Person or Company to be Called?
205
No
Yes
Press Flash/RDL Key 1410 to Place the Call
206
A

Fig. 2A

Fig. 2B


A
Ten Digits of Caller ID Data Retrieved From Calling List Structure
207
Compare Area Code of Phone Number Against the Local Area Code Table
208
Match an Entry in Local Area Code Trace?
209
No
Yes
Add a 1 in Front of Phone Number
210
Matched Entry Programmed for 7 or 10 Digits
211
7
10
Strip 1st Three Digits of Phone Number
214
Dial As Is
213
Line Available?
215
No
Yes
Enter Queue to Wait for Line
217
Seize Line
216
Assign DTMF Sender
218
Dial Phone Number
219

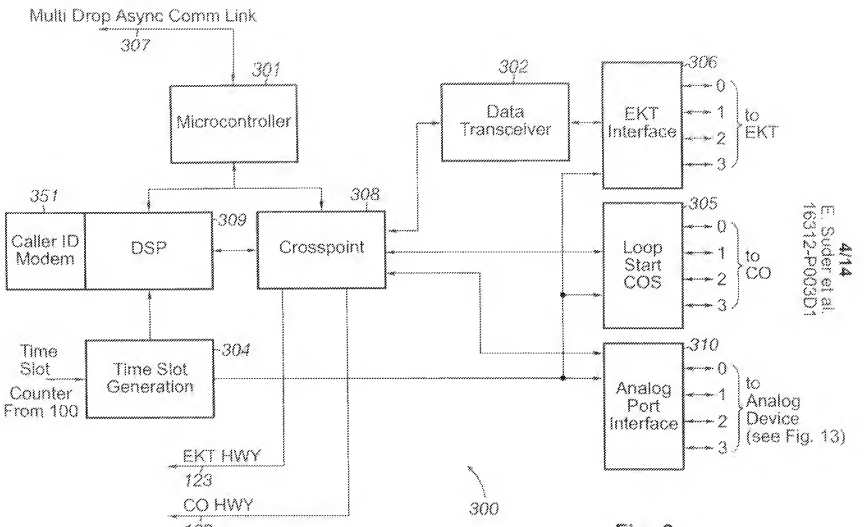

Multi Drop Async Comm Link
307
301
Microcontroller
302
Data Transceiver
306
EKT Interface
0
1
2
3
to EKT
351
Caller ID Modem
DSP
309
308
Crosspoint
305
Loop Start COS
to CO
Time Slot Counter From 100
Time Slot Generation
304
310
Analog Port Interface
to Analog Device (see Fig. 13)
EKT HWY
123
CO HWY
122
300

Fig. 3

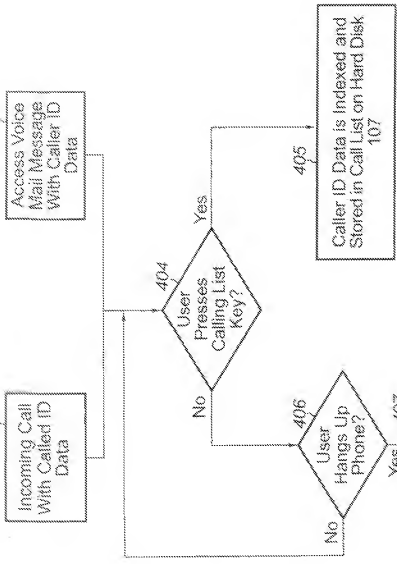

403
Incoming Call With Called ID Data
402
Access Voice Mail Message With Caller ID Data
404
User Presses Calling List Key?
Yes
No
405
Caller ID Data is Indexed and Stored in Call List on Hard Disk 107
406
User Hangs Up Phone?
Yes
No
407
Call or Voice Access Complete

Fig. 4

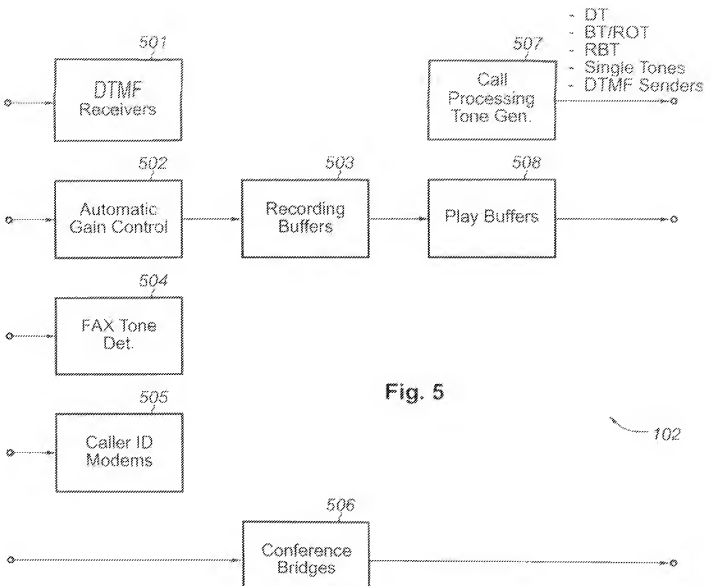

501
DTMF Receivers
502
Automatic Gain Control
503
Recording Buffers
504
FAX Tone Det.
505
Caller ID Modems
506
Conference Bridges
507
Call Processing Tone Gen.
- DT
- BT/ROT
- RBT
- Single Tones
- DTMF Senders
508
Play Buffers
102

Fig. 5

1101
1104
CODEC
123
Audio
1102
Data
To Phone Ø
To Block 302
Data Ø
306
P I C
1103
+36V

Fig. 6

1201
Line Interface
Line Voltage Monitor
1203
1203
1204
DSLAC Chip with CODEC
122
TIP
Ring
CO To Line Ø

Fig. 7

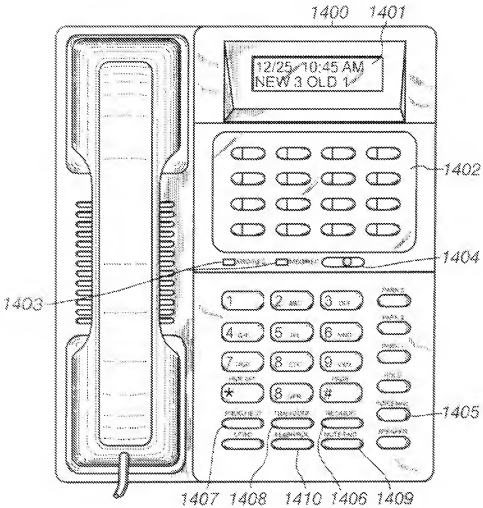

1400
1401
12/25 10:45 AM
NEW 3 OLD 1
1402
1404
1403
1405
1407
1408
1410
1406
1409

Fig. 8

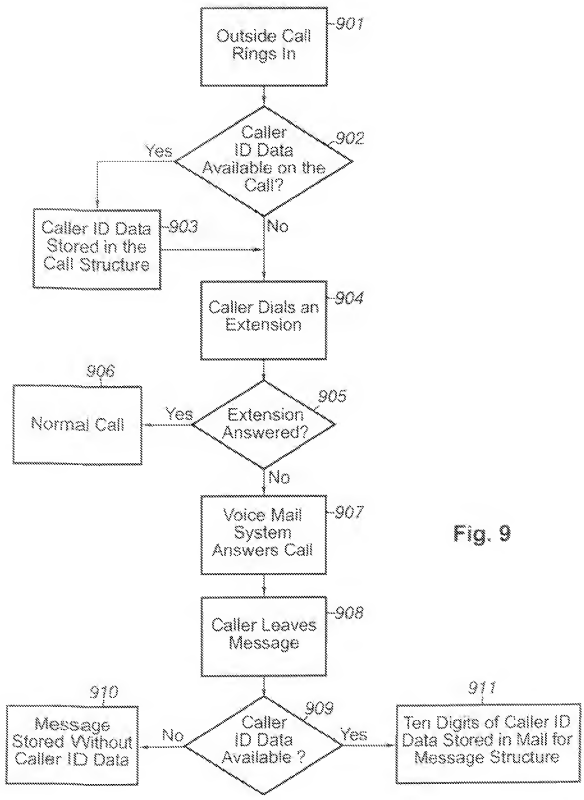

Outside Call Rings In
901
Caller ID Data Available on the Call?
902
Yes
No
Caller ID Data Stored in the Call Structure
903
Caller Dials an Extension
904
Normal Call
906
Extension Answered?
905
Yes
No
Voice Mail System Answers Call
907
Caller Leaves Message
908
Caller ID Data Available ?
909
No
Yes
Message Stored Without Caller ID Data
910
Ten Digits of Caller ID Data Stored in Mail for Message Structure
911

Fig. 9

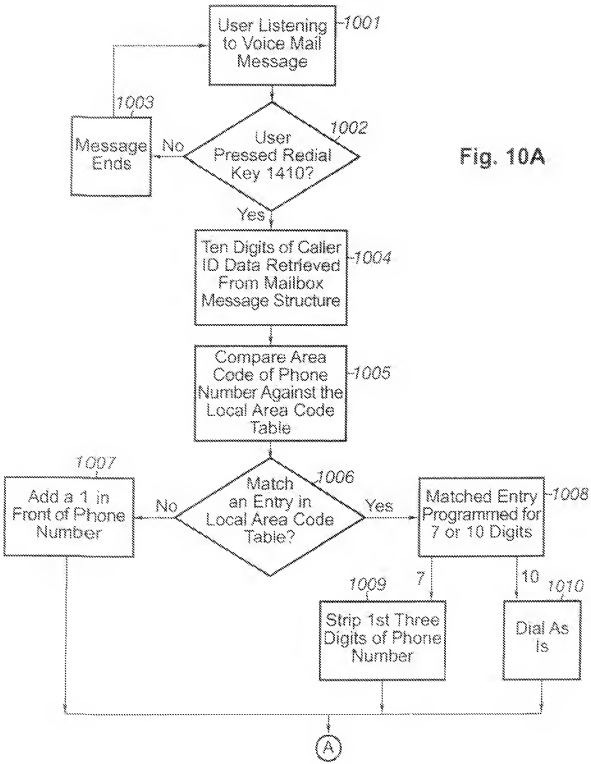

User Listening to Voice Mail Message
1001
1003
Message Ends
No
User Pressed Redial Key 1410?
1002
Yes
Ten Digits of Caller ID Data Retrieved From Mailbox Message Structure
1004
Compare Area Code of Phone Number Against the Local Area Code Table
1005
1007
Add a 1 in Front of Phone Number
No
Match an Entry in Local Area Code Table?
1006
Yes
Matched Entry Programmed for 7 or 10 Digits
1008
7
10
1009
Strip 1st Three Digits of Phone Number
Dial As Is
1010
A

Fig. 10A

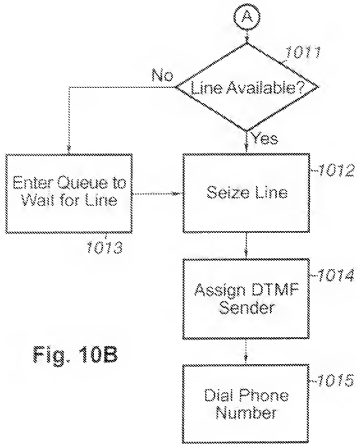

A
1011
No
Line Available?
Yes
Enter Queue to Wait for Line
1013
Seize Line
1012
Assign DTMF Sender
1014
Dial Phone Number
1015

Fig. 10B

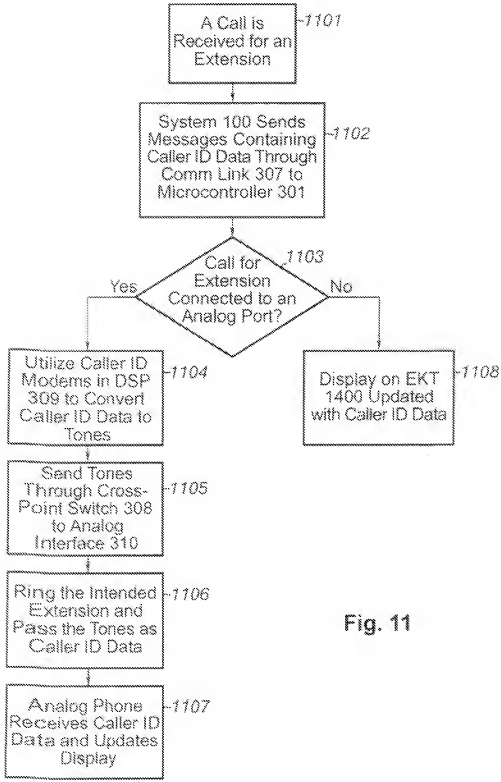

A Call is Received for an Extension
1101
System 100 Sends Messages Containing Caller ID Data Through Comm Link 307 to Microcontroller 301
1102
Call for Extension Connected to an Analog Port?
1103
Yes
No
Utilize Caller ID Modems in DSP 309 to Convert Caller ID Data to Tones
1104
Send Tones Through Cross-Point Switch 308 to Analog Interface 310
1105
Ring the Intended Extension and Pass the Tones as Caller ID Data
1106
Analog Phone Receives Caller ID Data and Updates Display
1107
Display on EKT 1400 Updated with Caller ID Data
1108

Fig. 11

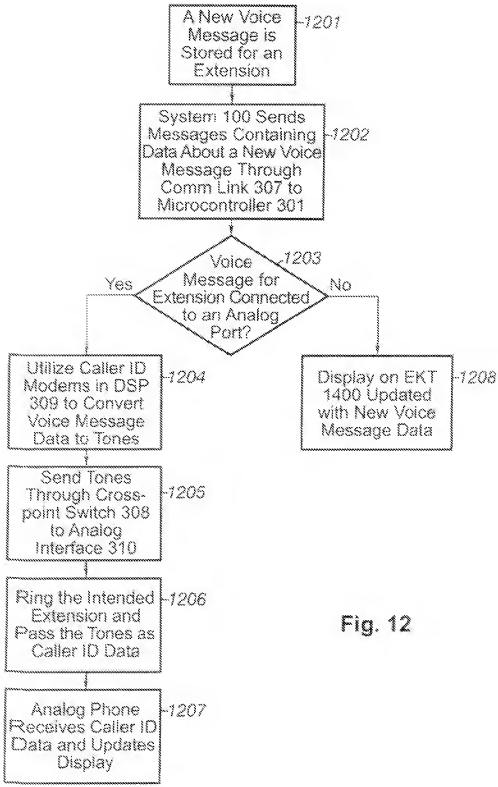

A New Voice Message is Stored for an Extension
1201
System 100 Sends Messages Containing Data About a New Voice Message Through Comm Link 307 to Microcontroller 301
1202
Voice Message for Extension Connected to an Analog Port?
1203
Yes
No
Utilize Caller ID Modems in DSP 309 to Convert Voice Message Data to Tones
1204
Display on EKT 1400 Updated with New Voice Message Data
1208
Send Tones Through Cross-point Switch 308 to Analog Interface 310
1205
Ring the Intended Extension and Pass the Tones as Caller ID Data
1206
Analog Phone Receives Caller ID Data and Updates Display
1207

Fig. 12

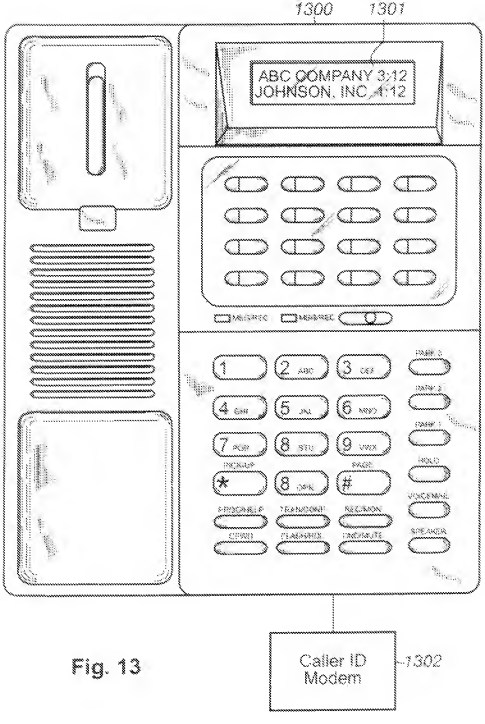

1300
1301
ABC COMPANY 3:12
JOHNSON, INC 4:12
Caller ID
Modem
1302

Fig. 13